

**From:** Angela McFadden/R3/USEPA/US  
**Sent:** 1/6/2012 11:25:29 AM

**To:** Judith Hykel/R3/USEPA/US@EPA; Karen Melvin/R3/USEPA/US@EPA; Michael Dunn/R3/USEPA/US@EPA; Jacqueline Morrison/R3/USEPA/US@EPA; Jessica Greathouse/R3/USEPA/US@EPA; Angela McFadden/R3/USEPA/US@EPA; Jennifer Lynn/R3/USEPA/US@EPA; Richard Killian/R3/USEPA/US@EPA; James VanOrden/R3/USEPA/US@EPA; Marcos Aquino/R3/USEPA/US; Bill Jones/R3/USEPA/US@EPA; Peter Gold/R3/USEPA/US@EPA; Humane Zia/R3/USEPA/US@EPA; Terri-A White/R3/USEPA/US@EPA; Thomas Damm/R3/USEPA/US@EPA; Terry Simpson/ESC/R3/USEPA/US@EPA; Jennie Saxe/R3/USEPA/US@EPA; Garth Connor/R3/USEPA/US  
**CC:** Brent Heverly/R3/USEPA/US@EPA  
**Subject:** Fw: methane in PA groundwater

Please share with folks in your division who'd be interested in this article. We'll also get this posted to the RETF Quickplace site.

thanks,

Angela

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----- Forwarded by Angela McFadden/R3/USEPA/US on 01/06/2012 10:59 AM -----

**From:** "Daniel Soeder" <Daniel.Soeder@NETL.DOE.GOV>  
**To:** Angela McFadden/R3/USEPA/US@EPA  
**Date:** 01/06/2012 10:40 AM  
**Subject:** methane in PA groundwater

Angela: You are probably going to want to know about this if you haven't already seen it.

The attached article was in Oil & Gas Journal about a month ago. I just got a copy of it yesterday from Tim Carr at WVU. It presents methane in groundwater data in northeastern Pennsylvania collected by Cabot from 1700 wells as part of their baseline monitoring program. They found methane in almost 80% of the water wells sampled, and a strong correlation between methane concentration and topography, with the highest values in stream valleys and the lowest on hilltops. Their interpretation is that the stream valleys are located on bedrock fracture systems, which provide conduits for upward migration of methane from black shales in the Lock Haven Formation beneath the Catskill Formation aquifer. Cabot compared their 1700 water wells to the 18 that Duke University sampled, and claim to have found no statistical correlation between methane concentration and distance from a Marcellus Shale gas well.

Ex. 5 - Deliberative

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This should make for a very interesting meeting down at Duke next week.

- Dan

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